

## ABSTRACT

A medical pump with a closed loop stroke feedback system and method, for use with a pumping chamber, for example in a cassette, is disclosed. The pump includes a pumping element  
5 that intermittently pressurizes a pumping chamber during a pumping cycle. A pressure sensor detects the pressure exerted by the pumping element on the pumping chamber. A position sensor detects the position of the pumping element. A processing unit processes pressure data from the pressure  
10 sensor and position data from the position sensor to determine a calculated stroke volume of the pump for a pump cycle, and to adjust a stroke frequency of the pump to compensate for variation in the stroke volume.